



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/723,624

11/26/2003

Charles J. Koehler

65858-0029

1146

10291

7590

09/26/2005

RADER, FISHMAN & GRAUER PLLC  
39533 WOODWARD AVENUE  
SUITE 140  
BLOOMFIELD HILLS, MI 48304-0610

EXAMINER

BARBEE, MANUEL L

ART UNIT

PAPER NUMBER

2857

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/723,624

Applicant(s)

KOEHLER ET AL.

Examiner

Manuel L. Barbee

Art Unit

2857

*RM*

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-120 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-120 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/23/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 62 is objected to because of the following informalities: Claim 62 should be amended to correct the lack of antecedent basis for "the second substance" in claim 62. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 was amended to include limitations for "creating a combined plot ..., wherein each x-value corresponds to at most one datum in the combined plot." Those limitations are also a part of claim 2, which includes limitations to "place a plurality of combined plots on the graph." While the specification describes creating a combined plot that may include an x-value that corresponds to one datum, the specification does not disclose creating a plurality of combined plots with an x-value that corresponds to one datum. Since each of the plurality of combined plots is shown separately on the graph, each x-value corresponds to more than one datum (Fig. 8).
4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2857

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-63, 92, 94-97 and 103-120 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims do not clearly distinguish between the substance used to develop the prediction equation and the substance being monitored. For example, claim 1 is directed to a method of monitoring a substance and recites a step of disposing an electrode in the substance. Claim 8 recites a prediction equation that is created using known properties of the substance in which an electrode is disposed. Claim 9 recites limitations for using the prediction equation to predict at least one property of a second substance. It would appear that the second substance is the substance being monitored. Similar ambiguity is found in other independent claims 14, 30 and 44 and in dependent claims 92, 94-97 and 103-107. The claims should make clear the difference between the substance being monitored and the substance with known properties being used to create the prediction equation and that the second substance is the substance being monitored.

6. Claims 64-120 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claims 64-120 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the electrode

Art Unit: 2857

mechanism disposed in the substance for generating measurements or data over a range of frequencies. Claims 64 and 84 each recite generating a plurality of plots of spectra over a range of frequencies. Claim 108 recites generating a plurality of Nyquist plots associated with a sample of the substance. Generation of these plots is not arbitrary. The invention as described in the specification makes clear that these plots are generated using an electrode disposed in the fluid being used to generate the prediction equation used to monitor or analyze a fluid with an unknown condition (pars. 6-9).

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Bauer et al. (EP 1014082 A2).

With regard to disposing an electrode in a substance, as shown in claim 1, Bauer et al. teach disposing a probe assembly in a fluid (par. 14; Fig. 1). With regard to exciting the electrode mechanism sequentially with a specified number of alternating voltages at different frequencies in a range of frequencies, generating at least one datum associated with each of the frequencies and creating a graph with a combined plot of a plurality of spectra using each at least one datum, wherein each x-value corresponds to at most one datum, as shown in claim 1, Bauer et al. teach applying a

Art Unit: 2857

voltage to a fluid and sweeping the frequency through a range of frequencies and plotting the resistance measurement for each frequency (pars. 37-39; Figs. 12-15).

With regard to a plurality of combined plots, Bauer et al. teach a plurality of combined plots (Figs. 12-15).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 64, 65, 68, 69 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lvovich et al (US Patent No. 6,577,112).

With regard to generating a plurality of spectra over a range of frequencies, as shown in claim 64, Lvovich et al. teach generating a plurality of Nyquist plots (Figs. 2 and 3). Lvovich et al. do not teach creating a second plot that comprises the plurality of first plots by sequentially assigning x-values to selected frequencies in the plurality of first plots, as shown in claim 64. The Examiner takes official notice that it is well known to plot a spectra and then to change the scale of the plot so that more information is shown on the screen or so that one part of the plot can be seen closer. Changing the scale of a plot shown on a screen would require assigning x-values to create the second plot using a different scale. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fluid condition monitor, as taught by

Lvovich et al. to include changing the scale of the plot, because then the more options would have been available for viewing the plot.

With regard to generating a plurality of plots, as shown in claim 65, Lvovich et al. teach generating a plurality of plots col. 7, lines 61-65; Figs. 2 and 3). With regard to a Nyquist plot with data from the bulk region and the interfacial region, as shown in claims 68 and 69, Lvovich et al. teach a Nyquist plot showing the real and imaginary impedance. With regard to wherein the range of frequencies is between 75 kilohertz and .0075 hertz, as shown in claim 72, Lvovich et al. teach a range of frequencies between 100 MHz and .001 hertz (col. 7, lines 45-48).

### ***Response to Arguments***

12. Applicant's arguments filed 1 August 2005 have been fully considered but they are not persuasive.

Applicant states that they believe amendments to claims 1, 14, 30, 84 and 108 obviate rejections to claims 1-63, 92, 94-97 and 103-120 under Section 112, second paragraph. Claim was amended to state that each x-value in the combined plot corresponds to at most one datum in the combined plots. The amendment to claim 1 does not clarify the difference between a substance with known properties, or a reference substance, being used to generate a prediction equation and the substance being monitored. Claims 14 and 30 have been amended to include limitations for "at least one prediction equation that is generated in part by using the at least one datum." The amendments to claims 14 and 30 do not clarify the difference between a substance with known properties, or a reference substance, being used to generate a prediction

Art Unit: 2857

equation and the substance being monitored. Claim 84 was amended to remove reference to “a substance.” Claims 92 and 94-97 now refer to “a substance.” The amendments to claims 84, 92, 94-94 and 103-107 do not remove the ambiguity between the substance with the known properties and the substance being monitored. Similarly, the amendment to claim 108 does not clarify the difference between a substance with known properties, or a reference substance, being used to generate a prediction equation and the substance being monitored.

In response to the rejection under Section 112, second paragraph to claims 64-120, alleging that these claims omitted essential elements, Applicant states that the specification makes clear that “[a]lthough the invention is described herein with reference to system 100, those skilled in the art will appreciate that other configurations and other components could support the claimed systems and methods.” While the claims may not be limited to the specific embodiment described in the specification, the invention is directed to monitoring the condition of substance (par. 1). Applicants’ invention requires the measurement of data from a reference substance with known properties to be used in monitoring the condition of a substance with unknown properties (pars. 6, 7).

With regard to claims 64, Applicant states that the Examiner’s assertion that it is well known to “change the scale of the plot” is irrelevant to claim 64. Further, Applicant challenges the Official Notice. Claim 64 has limitations for “creating a second plot that comprises the plurality of first plots by sequentially assigning x-values to selected frequencies in the first plots.” Changing the scale of the display on an oscilloscope with

Art Unit: 2857

a plurality of plots or device displaying a plot of spectra would create a second plot and would reassign x-values in the plot. Sellers (US Patent No. 3,707,147) teach adjusting a waveform display to show two or three cycles in order to allow a desired amount of information to be viewed (col. 1, lines 13-25; col. 3, line 56 - col. 4, line 4; col. 9, line 46 - col. 10, line 49; esp. col. 10, lines 4-9). Pickerd (US Patent Application Publication 2003/0208328) teach controls for the vertical and horizontal scale of an oscilloscope display (par. 33; Fig. 10).

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Byington et al. (US Patent Application 2005/0104607) teach an electrochemical impedance measurement system.

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2857

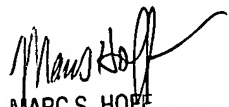
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manuel L. Barbee whose telephone number is 571-272-2212. The examiner can normally be reached on Monday-Friday from 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mlb  
September 19, 2005

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800